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Anodic oxidation of formaldehyde on the copper surface in alkaline solutions of aminotris(hydroxymethyl)methane and EDTA

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Abstract

It was established by cyclic voltammetry and electroreflection modulation spectroscopy that the copper surface in strong alkaline media (pH 12.6) at potentials of -0.4 to -0.5 V is covered with a copper(I) oxide film, which keeps existing in the presence of formaldehyde. Aminotris(hydroxymethl)methane (TRIS) makes the oxide film thinner and is directly involved in the elementary act of copper ionization to give complexes 1:1.